UNITED STATES PATENT AND TRADEMARK OFFICE

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2008*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13,15-27 and 29-41* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13,15-27 and 29-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to the RCE filed 10/25/07.

2.   Claims 1-13, 15-27 and 29-41 are remain pending in the case. Claims 1, 16, and 30 are

independent claims.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making
> and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it
> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
> contemplated by the inventor of carrying out his invention.

4.   Claims 1, 16, and 30 are rejected under 35 U.S.C. 112, first paragraph, as failing to

comply with the enablement requirement. The claim(s) contains subject matter which was not

described in the specification in such a way as to enable one skilled in the art to which it pertains,

or with which it is most nearly connected, to make and/or use the invention. The specification is

not enabling for the functionality of "Is Instance" and "Is Valid" operators. The specification

gives no indication as to what constitutes the "Is Instance" and "Is Valid" operators. In addition,

the specification is deficient on describing what it means to "return TRUE" based on the

operators as well as how this result would occur or be produced. For purposes of examination

the Examiner will assume the "Is Instance" and "Is Valid" operators to mean only that the

processed XML based WSDL document has been validated by the mapped XSD document (i.e.

if the document was not valid the messaging system of the W3C reference could fail).

Claim Rejections - 35 USC § 101

5.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6.   Claims 13, 16-27, 29 and 30 are rejected under 35 U.S.C. 101 because the claimed

invention is directed to non-statutory subject matter. Claims 13, 16-27, 29, and 30 recite a

computer readable medium which could merely be a transmission medium to include signals

such as carrier waves (Paragraph 49; "carrier wave"). Such a transmission medium does not fall

within a statutory category of invention as it would not be structurally and functionally

interconnected to the software instructions in such a manner to enable the software to act as a

computer component and realize any functionality. Thus the claims must be amended to include

an appropriate computer readable medium (e.g. a computer readable storage medium).

Claim Rejections - 35 USC § 102

7.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

8.   Claims 1-6, 8-10, 12-13, 15-21, 23-25, 27, 29-35, and 37-340 are rejected under 35

U.S.C. 102(a) as being anticipated by W3C, "Web Services Description Language (WSDL) 1.1",

03/15/01, pp. 1-51, http://www.w3.org/TR/wsdl (Hereafter W3C).

   -In regard to substantially similar independent claims 1, 16, 30 and dependent claims 13, 15, and 29, W3C teaches a method, computer readable medium, and device for providing interface description for a service of a device in a computing system, comprising:

   creating a one to one mapping of each abstract type in the device or object to an XML schema type (Page 4: "Types- a container for data type definitions using some type of system (such as XSD)" & "WSDL recognizes the need for rich type systems for describing message formats, and supports the XML schema specification"; Page 5: e.g. Example 1) said mapping comprising:

   a one to one mapping between the abstract type to said XML schema type and a one to one mapping between said XML schema type to said abstract type (Page 13: "encoding abstract types using XSD"),

   whereby there is a one to one relationship between an instance of the abstract type to an XML document so that an Is Instance operator between the abstract type and the instance returns TRUE if and only if an Is Valid operator between the corresponding XML schema type and the XML document returns TRUE (Page 13: "resulting XSD schema validates the particular wire format");

   describing the one to one mapping with an extensible markup language (XML)-based Type Description Language having a grammar for representing behavior aspects of said abstract type and said XML schema type (Pages 3-4: "defining an XML grammar for describing network services...automating the details involved in application communication...WSDL allows using other type definition languages via extensibility").

-In regard to dependent claims 2, 17, and 31, W3C teaches wherein the XML based

Type Description Language (TDL)(Page 4: "Types"; Pages 13-14: "2.2 Types") accommodates

classes that have data and behavior aspects (Page 14: "type. Refers to an XSD simpleType or

complextType"; (Page 11: "<complexType>....</complexType>": i.e. the complex type class

defines a behavior).

-In regard to dependent claims 3, 18, and 32, W3C teaches creating a one to one

mapping from a programming construct (Page 5: Example 1: "<types>......</types>") to an

XML schema for describing the programming construct (Page 4: "WSDL recognizes the need

for rich type systems for describing message formats, and supports the XML schema

specification"; Page 9: "types, which provides data type definitions used to describe the

messages exchanged").

-In regard to dependent claims 4, 19, and 33, W3C teaches wherein the programming

construct is one of pointer, class, array, subtype, enumeration, service reference, or bit field

(Pages 13-14: "2.2 Types").

-In regard to dependent claims 5, 20, and 34, W3C teaches creating a one to one

mapping from a constant value of complex type to an XML schema for describing the constant

value of complex type (Page 11: "<complexType>....</complexType>") and defining a constant

value global attribute in said TDL (Page 11: "xmls="httpe://www.w3.org/2000/10/XMLSchema" & "<element name = "tickerSymbol" type ="string"/>").

       -In regard to dependent claims 6, 21, and 35, W3C teaches creating a one to one mapping of actions, services, interfaces, methods, properties, and event sources from abstract type system to an XML schema type (Pages 3-4: i.e. a WSDL document defines a plurality of components to include, Types, Messages, Operations, Bindings, Ports, Services. Each of which, unless further defined by the specification, could read on one or a plurality of claimed elements in view of the rest of the disclosure of the W3C reference).

       -In regard to dependent claims 8, 23, and 37, W3C teaches wherein the XML-based IDL as a wire format for message communications relating to the service between devices of the computing system (Page 12: "wire format is actually XML).

       -In regard to dependent claims 9, 24, and 38, W3C teaches creating a one to one mapping from the wire format to the message communications (Page 12: "wire format is actually XML).

       -In regard to dependent claims 10, 25, and 39, W3C teaches wherein TDL enables a transfer of a service reference across an application boundary (Page 1: Abstract; Pages 3-4: Introduction).

   -In regard to dependent claims 12, 27, and 40, W3C teaches wherein the XML-based

TDL has action elements, service elements, interface elements, method elements, property

elements, and event source elements (Pages 3-4: i.e. a WSDL document defines a plurality of

components to include, Types, Messages, Operations, Bindings, Ports, Services. Each of which,

unless further defined by the specification, could read on one or a plurality of claimed elements

in view of the rest of the disclosure of the W3C reference.

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

10.   Claims 7, 22, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over

W3C, "Web Services Description Language (WSDL) 1.1", 03/15/01, pp. 1-51,

http://www.w3.org/TR/wsdl (Hereafter W3C).

   -In regard to dependent claims 7, 22, and 36, W3C does not specifically teach wherein

TDL supports inheritance of programming constructs. It would have been obvious to one of

ordinary skill in the art at the time of the invention for the TDL of W3C to have supported

inheritance of programming constructs, because W3C taught a TDL utilizing XML Schema,

which was notoriously well known in the art at the time of the invention to provide inheritance to

the typed programming constructs.

11.   Claims 11, 26, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over

W3C, "Web Services Description Language (WSDL) 1.1", 03/15/01, pp. 1-51,

http://www.w3.org/TR/wsdl (Hereafter W3C) in view of Jeff Schneider, "Convergence of Peer

and Web Services", 07/20/01, pp. 1-7,

http://www.openp2p.com/pub/a/p2p/2001/07/20/convergence.html (Hereafter Schneider).

        -In regard to dependent claims 11, 26, and 41, W3C teaches wherein the computing

system was a web services distributed computing environment (Page 1: Abstract; Pages 3-4:

Introduction"). W3C does not specifically teach wherein the computing environment was peer to

peer. Schneider teaches the eventual convergence of web services computing environment and a

peer to peer environment (Page 1: "it seems reasonable to predict the convergence of these

paths"). It would have been obvious to one of ordinary skill in the art at the time of the invention

for the web services of W3C to have implemented some of a peer to peer distributed computing

environment, because Schneider teaches such a implementation would result in increased

efficiency and reduced handling costs (Page 6: "increased efficiency and reduced handling

costs")

Response to Arguments

12.   Applicant's arguments filed 02/12/08 have been fully considered but they are not

persuasive.

        -In regard to independent claim 1, Applicant argues the W3C 1.1 reference does teach the

newly amended limitations of the "Is Valid" and "Is Instance" operator, disclosing a one to one

mapping, as well as having a grammar for representing the behavior aspects of said abstract type

and XML schema. The Examiner respectfully disagrees. Please note the above 35 U.S.C. 112

first paragraph rejection in view of "Is Valid" and "Is Instance" operators. W3C 1.1 clearly

teaches wherein each type element defining a data type definition in the WSDL document was

mapped to an XML Schema element, referenced from an associated XML Schema in the WSDL

document, and used to define the types in a message. Therefore each type definition in the

WSDL document was mapped to a corresponding element in the XML Schema that was used to

define it. In response to applicant's argument that the references fail to show certain features of

applicant's invention, it is noted that the features upon which applicant relies (i.e. "operator takes

a value and a class object…is an instance of the class" & "data in the XML document is valid

against the constraints specified in the XML schema") are not recited in the rejected claim(s).

Although the claims are interpreted in light of the specification, limitations from the specification

are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir.

1993). Wherein the Applicant argues that the W3C reference does not teach a grammar for

representing the behavior aspects of said abstract type and XML schema, the Examiner notes that

the W3C reference teaches an XML formatted Type Description Language in that WSDL

provides a programming language for defining the portTypes/interfaces and bindings that a given

web service implemented (Pages 3-4: "defining an XML grammar for describing network

services...automating the details involved in application communication...WSDL allows using

other type definition languages via extensibility").

     -In regard to dependent claim 6, Applicant argue that the W3C reference does not teach a

one to one mapping of actions, services, interfaces, methods, properties, and event sources from

abstract type system to an XML schema type. The Examiner respectfully disagrees and notes

that said recited features are broadly recited in the claims. Said features have been given their

broadest reasonable interpretation in the art and as such the defined plurality Types, Messages,

Operations, Bindings, Ports, and Services components of WSDL document are could read on one

or a plurality of the claimed elements. The Applicant is encouraged to further define each of said

features from information included in the specification to more clearly delineate said features

from those recited in the W3C reference.

-In regard to dependent claim 7, Applicant argues that the teaching of inheritance of

programming constructs. The Examiner respectfully disagrees with the Applicant. While the

W3C 1.1 reference does not explicitly teach inheritance of programming constructs, W3C 1.1.

does teach utilizing the XML Schema Definition (XSD) for defining the programming

constructs. As described above, the Examiner noted that it was notoriously well known in the art

at the time of the invention that XML Schema provided inheritance to the typed programming

constructs. Inheritance types for XML Schema included extension and restriction types, wherein

the extension type provided the benefit of allowing a user to append additional elements after the

content model of a base type and the restriction type provided the benefit of allowing a user to

restrict the content model of the base type. The Examiner is unable to ascertain the answer to the

Applicant's question regarding, why it took 5 years for the for the W3C (i.e. World Wide Web

Consortium) to update to the specifically cited version of WSDL 2.0.

-In regard to dependent claim 8, Applicant argues that the W3C 1.1 reference teaches

away from the claimed subject matter. The Examiner respectfully disagrees and notes that the

W3C 1.1 reference teaches wherein the wire format could be XML but could also define the

types in the message communications regardless if wire format wasn't in XML.

Conclusion

13.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Please note the additionally cited references on the accompanying PTO-892 form.

14.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Adam L. Basehoar whose telephone number is (571)-272-4121.

The examiner can normally be reached on M-F: 7:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Steve Hong can be reached on (571) 272-4124. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Adam L Basehoar/
Primary Examiner, Art Unit 2178